STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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January 7, 1986

EXPRESS MAIL
(B 76409297)

Mr. Rudy Higgins, General Manager
Texasgulf Chemical Company
P. O. Box 1208
Moab, Utah 84532

Dear Mr. Higgins:

RE: Review of Cane Creek MR-1, ACT/019/005, Grand County, Utah

The mining technical staff has completed its review of the Cane Creek MR-1. Enclosed please find the deficiency comments generated to date.

As you will note, based on the extent of the deficiency comments, the MR-1 will need to be revised significantly. Additionally, further comments and concerns may arise based on the mining technical staff site visit slated for January 9, 1986.

The Division is most interested in permitting the Cane Creek operation by July 1, 1986. In order to facilitate this, please forward the response to the deficiencies noted herein by March 28, 1986.

Please feel free to contact me if you should have any questions on this review.

Sincerely,

Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

JJW/btb
Enclosures
cc: Technical Review Team
9294R-46

MR-1 DEFICIENCY COMMENTS

Texasgulf, Inc.
Cane Creek Mine
ACT/019/005, Grand County, Utah

January 7, 1986

Rule M-3(1) - PGL

The entire list of drawings that are listed should be updated and resubmitted and include: (all of the maps should be of adequate scale and detail to show topographic features and indicate details of proposed or existing operations)

(a) The location of the land affected and the total number of surface acres involved.

(b) Show existing, active or inactive, underground or surface mined areas, the boundaries of surface properties and the names of surface and mineral owners.

(d) Show the names of all roads, rivers, buildings, abandoned or active surface facilities and transmission lines on the land affected and within 500 feet of the exterior limits of the land affected.

Rule M-3(1) - JRF

(d) The applicant must denote the extent and location of the NaCl tailings pond on a properly scaled map. The map submitted does not have a legend, this must be corrected.

(e) The applicant does not address this paragraph of Rule M-3. The applicant must show on a map of the permit area any constructed drainways, natural waterways used for drainage, drainage plans for storm runoff away from the tailings pond and slurry evaporation ponds.

The applicant refers to several maps (e.g., Drawing No. 24-X-01) in the Mining and Reclamation Plan (MRP); these maps cannot be found.

(h) The applicant must address leaching of the NaCl tailings water into any of the surrounding ground or surface waters. The applicant must also address leaching of chemical constituents from the lined evaporation ponds (i.e., integrity of the pond liner). Does the applicant have surface water monitoring sites on the Colorado River above and below the mine site?

Rule M-3(1)(f) - RVS

The applicant must submit a titled map with an appropriate figure number that shows the location and present status of exploration, injection and production boreholes. Moreover, the applicant must include the depth of water bearing strata encountered, thickness of mineral deposits and the thickness and depth of toxic materials encountered.

Rule M-3(g) - EH

The applicant must submit an updated map indicating the location and extent of the NaCl tails area, any topsoil or topsoil substitute storage areas, along with tailing, reject material and water storage areas. The maps must be of a scale that clearly depicts each area.

Rule M-3(2) - KMM

(e) The applicant should submit a detailed discussion of a planting program which will stabilize the land and support the postmining land uses. The applicant has proposed a species mix which is acceptable but should apply it at a rate of 50-80 seeds per $ft^2$ if drilled and 100-150 seeds per $ft^2$ if broadcast or hydroseeded. An acceptable rate for broadcast seeding would be:

Siberian wheatgrass - five lbs Pure Live Seed (PLS)/ac
Galleta - five lbs PLS/ac
Indian ricegrass - five lbs PLS/ac
Sand dropseed - one lb PLS/ac
Fouwing saltbush - two lbs PLS/ac

Adding two lbs/ac (each) of yellow sweetclover and alfalfa is recommended for providing quick cover for erosion control and a nurse crop. The applicant's plan should include techniques and equipment to be used and a discussion of seeding, fertilization, mulch, shrub plantings, irrigation, etc. The plan should discuss problem areas (e.g., saline soils) and special planting areas.

(f) The applicant should include a relative timetable for each step in the plan (e.g., fall seeding) and a general reclamation timetable to include contemporaneous revegetation and final revegetation areas.

Rule M-3(2)(b) - KMM

The applicant should discuss recreation and wildlife habitat as future land uses of the area.

Rule M-3(2)(c) - PGL

A description of the tailing deposition must be described in the MRP.

Rule M-3(2)(c) - EH

The applicant must submit a plan that describes the methods that will be used to deposit overburden, tailing, waste, reject materials and topsoil that is conducive to reclamation.

Rule M-3(2)(c)(1) - EH

The applicant must submit plans that indicate the handling and preparation of all plant supporting soil materials that will be used during reclamation.

Rule M-3(2)(c)(2) - EH

The applicant must submit a plan that describes the proposed methods of isolation and/or reclamation of the NaCl disposal area. Measures must be taken to insure that leaching of this material into ground or surface water does not take place. What methods will be used to insure that wind blown NaCl will not contaminate adjacent areas?

Rule M-3(2)(d) - PGL

An explanation of the grading, backfilling and compaction of fill to be or already accomplished must be described.

Rule M-3(3) - PGL

Has there been any change in the type or method of mining? Will the solution mining method at its present status remain the same for the mining permit term?

Rule M-3(5)(c) - RVS

The applicant must submit a description of the plugging program for all drill holes. The plugging program must achieve, at a minimum, those criteria listed under parts 1 and 2 of this section.

Rule M-5 Surety Guarantee - PGL

The applicant must submit a detailed bond estimate that reflects a third party cost to perform the reclamation according to the approved reclamation plan. These costs are based upon the Division references--the Rental Rate Bluebook and the Means Index.

Rule M-10(1) - KMM

The applicant should justify the suitability of the reclaimed site for all post mining land uses (e.g., regraded slopes, remaining structures/materials, etc.).

Rule M-10 - PGL

(2)(a) The details of the closing of the two shafts should be submitted and enclosed in the MRP. (The shaft abandonment plan as approved by the Department of Health.)

(2)(b) The plan states that "debris and trash will be removed and disposed of in an appropriate landfill." Where is the authorized landfill? This cost must be included in the bond estimate.

The disposition of the buildings will be decided after the postmining land use is approved. The buildings may need to be removed, if so, the details will need to be included.

Rule M-10(2)(c) - RVS

See comments under Rule M-3(5)(c).

Rule M-10(2)(d) - RVS

The applicant must post warning signs along mine access routes. Warning sign locations must be identified on a map and warning sign maintenance and removal costs must be included in the bond estimate.

Rule M-10(3) - JRF

The applicant must submit hydrologic, geologic and water quality data for the tailings pond and adjacent area before a variance from Rule M-10(3) can be considered. These data will consist of, but not be limited to the following:

1. A geologic map that indicates strike and dip of the tailings pond area. Location of any boreholes and elevation of water encountered should be on the map.

2. Depth to the nearest water bearing strata.

3. A hydrologic map that indicates the surface drainage in the tailings pond area.

4. Soil infiltration data for the tailings pond and dam.

5. Stability analysis for the tailings pond dam.

6. Water quality data from the nearest hydrologically connected water system.

7. Annual climate data consisting of evaporation rate, mean annual temperature and mean annual precipitation.

Rule M-10(4) Slopes - PGL

The final configurations of the slopes should be submitted with appropriate cross sections. The stability of the slopes should also be demonstrated.

Rule M-10(6) - EH

The applicant must submit plans that describe all methods that will be employed to insure that the NaCl tailing can be safely isolated from the environment.

Rule M-10(9) - PGL

All structures, utility connections, equipment and debris should be removed from the surface prior to reclamation. The applicant requested a variance to retain the structures but did not include a justification.

Rule M-10(10) - PGL

Shafts and portals--the shaft abandonment plan must be included in this MRP.

Rule M-10(11) - JRF

The applicant must submit a detailed plan with calculations for control of sediment on the mine site.

Rule M-10(12)(2)(a) - KMM

The applicant must characterize the vegetation surrounding the disturbed area in order to establish a standard for determining reclamation success. Inventory methods must be approved by the Division. See "Vegetation Information Guidelines" for suggested methods of sampling. Sampling locations should be indicated on an appropriate map and sample data submitted to the Division.

Rule M-10(12)(2)(b) - KMM

The applicant should discuss monitoring methods and schedules proposed for evaluating revegetation success.

Rule M-10(12)(3) - KMM

The applicant should consider establishing test plots either in conjunction with or in addition to contemporaneous reclamation. Data obtained should be helpful either to determine appropriate revegetation materials and techniques for successful revegetation or in proving that the standards are not attainable.

Rule M-10(13) - JRF

See comments under M-10(3).

The applicant refers to Drawing No. 24-X-01 for the Tailing Treatment and Disposal pond. This drawing cannot be found in the MR-1.

Rule M-10(14) - EH

The applicant must identify a source(s) of soil material that will be used for reclamation. The identification must include chemical and physical analysis of the material along with methods that will be used to prepare these soils for reclamation.

It is strongly suggested that the local Soil Conservation Service (SCS) office be contacted to see if a soil survey of the area is available, if there is, it should be included with the MR-1. The survey can be used as a soil reconstruction and reclamation guide.

The applicant states that 25 lb/ac nitrogen and 20 lb/ac phosphorus will be applied at the time of reclamation. These values may or may not be correct. The best method is to base the application rate on the results of soil tests conducted for available nitrogen and phosphorus. Therefore, a commitment to test for these elements, at the time of reclamation, must be submitted.

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